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EXAMINER

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 22,27 and 38 are rejected under 35 U.S.C. 102(b) as being anticipated by Monser et al. (3795005).

Regarding Claim 22, Monser et al. show in Figure 1, an electrically controlled broadband group antenna comprising a plurality of antenna radiating elements arranged in a common plane (at least two, 15a and 15b, etc. are in a common plane), each antenna radiating element comprising a rotationally-symmetrical body (e.g. defined as the supports 39a-d in Figures 2 and 4 or the “solid” support 52(50) in Fig. 3, and described as conical) arranged on a ground plane that is common to several of the elements (see col. 3, lines 21-26), each body having a shape that tapers toward the axis of rotation with increasing distance from the ground plane, each radiating element being covered with a metallic casing surface 41,41’ (Fig. 3), and a feeder unit (e.g., 21r in Fig. 1) operatively connected to the antenna radiating elements, all arranged as claimed.

Regarding Claim 27, the base 37, 37’ defines a spacing sleeve positioned as claimed.

Art Unit: 2821

3. Claim 22 is rejected under 35 U.S.C. 102(b) as being anticipated by Praba (5258771).

Regarding Claim 22, Praba shows an electrically controlled broadband group antenna 10 comprising a plurality of radiating elements 12 or 14 (with at least two in each of those groups aligned along an vertical plane or line), and each element comprising a body of dielectric material arranged on a ground plane 40, each having an axis of rotation substantially perpendicular to the ground plane and the surface of each body having a shape that tapers toward the axis of rotation with increasing distance from the ground plane and each body covered with a metallic casing, the helical wire defining each antenna, and a feeder unit 22,28,32,36 operatively connected to the antenna radiating elements, all arranged as claimed.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Monser et al. (3795005) in view of Marino (6043785).

Regarding Claims 23 and 24, Monser et al. lack a specific teaching of isolating adjacent antenna elements. A skilled artisan knows and finds it obvious that the technique of slots between radiators taught by Marino, is employed for radiator

Art Unit: 2821

isolation by being electrically, an open circuit. Marino shows slots 17 or recesses between the radiators and formed within the ground plane 15. Therefore, it would have been obvious to the skilled artisan to employ such recesses/slots in the ground plane of Monser et al. for the purpose of radiator isolation (see column 4 second paragraph of Marino).

6. Claims 25,26 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Monser et al. (3795005) in view of Ohtsuka et al. (5801660).

Regarding Claims 25 and 26, screws are widely employed in the antenna art for securing antennas to a ground plane, as shown by Ohtsuka et al. Monser et al. merely state that the antennas are disposed on the common ground plane, leaving it to the skilled artisan to provide a proper securing means. Thus, it would have been obvious to the skilled artisan to employ the screws, such as 26 securing the antenna radiators in Monser et al. with the screws 26.

7. Claim 28-34,36,39-42 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Monser et al. (3795005).

Regarding Claims 28,32 and 44, Monser et al show two cables per element in Fig. 3 and at least one cable bush 45 when a single cable is used (Figures 2 and 4). A skilled artisan would have found it obvious to employ two cable bushes when two cable feeders and elements are used, such as in Fig. 3. As to Claim 29, coax is an obvious 50 ohm feeder for antenna elements and the choice to the skilled artisan who finds it obvious to employ in Monser et al. Regarding Claims 30 and 31, the arrangement of a rectangular and triangular pattern of antenna elements in Monser et al. is an obvious

Art Unit: 2821

choice and a skilled artisan would certainly arrange such elements so long as grating lobes are minimized. See Figure 1 of Monser et al. where such geometrical arrangements may be seen. Regarding Claim 33, the spacing of the antennas is set forth in column 4, first paragraph of Monser et al. A half-wave length is conventional in multi-element arrays. A skilled artisan would have spaced the antennas with such a wave length spacing. Regarding Claim 34, the microwave units are shown in Fig. 1 where they are defined by the plate to which the elements are mounted and all electronics beneath it. Regarding Claim 36, the second end of the radiators is the end mounted to the ground plane in Monser et al.

8. The patent to Riblet (2473446) is cited as of interest showing an antenna with a body 11 covered with a metallic casing 18 and tapered from the ground plane 12 toward the axis of rotation.

Response to Arguments

9. Applicant's arguments with respect to claims of record have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

10. Claim 46 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The aspect of defining a metallic casing entirely covering the surface of the body of the antenna does not appear to be taught in the prior art of record.

Art Unit: 2821

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael C. Wimer whose telephone number is (571) 272-1833. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas W. Owens can be reached on (571) 272-1662. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Michael C. Wimer/
Primary Examiner, Art Unit 2821

MW
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